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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,187	09/12/2000	Masaaki Ito	05905.0125	6735

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EXAMINER
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WANG, JIN CHENG

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/660,187

Applicant(s)

ITO, MASAOKI

Examiner

Jin-Cheng Wang

Art Unit

2672

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 25 October 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 6 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1 and 6-12

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_

Continuation of 5. does NOT place the application in condition for allowance because: 2. The amended claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. U.S. Patent No. 5,755,620 (hereinafter Yamamoto); in view of Inoue et al. U.S. Pat. No. 6,217,445 (hereinafter Inoue) and Oka et al. U.S. Patent No. 6,141,025 (hereinafter Oka).

(a) Yamamoto teaches a game device which reads from a storage means, prior to image processing, background data required in games for displaying a moving object within a virtual three-dimensional space together with a background, comprising:

Pre-reading means for pre-reading said background data from said storage means by establishing an area for pre-reading which includes: setting a predetermined angle-of-visibility based on a direction of the moving object (figures 15, 21 and 24), setting a limit-line of a visual field at a predetermined distance towards a front of the visual field, and setting a pre-reading start line at a predetermined distance beyond a front of the limit-line of the visual field that moves in the direction of the moving object when viewed from the moving object (column 10; 13-16);

Wherein said storage means stores said background data by dividing said background data into a plurality of areas in advance (column 13-16);

Said pre-reading means comprising judging means for judging on which of said areas said pre-reading start line is crossing to determine a specific area from among the plurality of areas, and reading means for reading the background data of the area judged as being crossed with said pre-reading line by this judging means (column 13-16);

Wherein said plurality of areas are respectively stored in said storage means by dividing the content of background data per type (column 13-16);

Said game device further comprising a work memory including a plurality of memory blocks each set at a same memory capacity (Yamamoto discloses a game device wherein plurality of areas AR<sub>n</sub> are respectively stored in storage means by dividing the background data into a plurality of blocks that correspond to areas AR<sub>n</sub>. Yamamoto has also taught reading means for reading in polygon data of AR<sub>n</sub> into memory blocks in accordance with the upper limit of polygons; column 13-16);

Wherein said reading means includes means for storing the background data of the crossed area in an integral number "n" of said memory blocks in said work memory in accordance with the amount of the background data to be stored (column 13-16);

(b) However, Yamamoto is silent to counting means and therefore Yamamoto lacks a full disclosure of the claimed limitation that "said game device further comprising counting means for detecting whether said moving object exists within said areas corresponding to memory blocks storing background data, or an area that exists within the visual field, in said work memory, and counting said moving object or visual field area periodically, wherein said reading means includes means for determining the memory block to store said background data based on a count value determined for each of said memory blocks by said counting means when it is judged that there is no vacant space in said work memory".

Yamamoto is also silent to means for judging whether one or more of said memory blocks of said work memory are vacant space or not and therefore lacks a full disclosure of the claim limitation that said reading means includes means for judging whether one or more of said memory blocks of said work memory are vacant space or not, and means for successively storing the background data of said crossed area in said integral number n of said memory blocks when said integral number of said memory blocks are judged as vacant space and of sufficient capacity to store the background data.

(c) Inoue and Oka teaches a game device comprising counting means for detecting whether said moving object exists within said areas corresponding to memory blocks storing background data (e.g., Inoue column 11, lines 49-67; column 12, lines 1-16), or an area that exists within the visual field (Inoue column 14, lines 5-40), in said work memory, and counting said moving object or visual field area periodically (e.g., Inoue column 11, lines 49-67; column 12, lines 1-16), wherein said reading means includes means for determining the memory block to store said background data based on a count value determined for each of said memory blocks by said counting means when it is judged that there is no vacant space in said work memory (e.g., Inoue column 11, lines 49-67; column 12, lines 1-16; Oka column 5, lines 40-67; Oka column 6, lines 1-40; Oka column 7, lines 3-40; Oka column 8, lines 20-65; column 10, lines 5-65).

Oka teaches the claim limitation that said reading means includes means for judging whether one or more of said memory blocks of said work memory are vacant space or not, and means for successively storing the background data of said crossed area in said integral number n of said memory blocks when said integral number of said memory blocks are judged as vacant space and of sufficient capacity to store the background data (Oka column 7 and 8. Oka discloses that display data contained in the texture cache is divided into a plurality of blocks such as texture addresses tagged by a flag which specifies the usage status of the texture block).

(d) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a counting means of Inoue/Oka and the judging means of the usage status of the memory blocks in the Yamamoto's game system because such a construction would have provided a means for judging the usage status of memory blocks.

(e) Such modification would have been required for determining the usage status of the memory blocks as suggested by Yamamoto by implicitly disclosing a working memory such as RAM 103 functioning as a buffer memory for the geometerizer 110 (e.g., column 5-6) thereby suggesting the obvious modification.

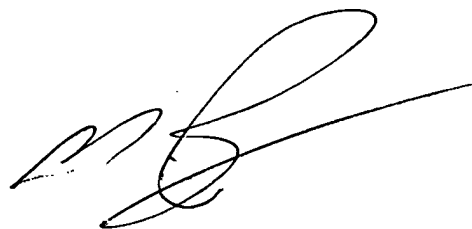
(f) One having the ordinary skill in the art would be motivated to do this because determining the usage numbers of the memory blocks would allow a selection of certain memory blocks to be used when the car or a moving object is moving in different area numbers (Yamamoto figure 21).

(g) The claim 7-8 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of counting means for memory blocks in a variety of forms. As noted above, Yamamoto discloses a game device for processing background data and displaying a moving object in three-dimensional virtual space (column 5-6). Yamamoto has taught judging means for determining (judging) which area AR<sub>n</sub> the vehicle is crossing and texture transfer should be performed in accordance to the position of the vehicle (Yamamoto column 13-16) and reading means for reading in texture memory the background data of the area determined (judged) as being crossed with by the determining (judging) means in accordance to the vehicle position (see for example, Yamamoto column 13-16).

Applicant argues in essence with respect to the claim 1 and similar claims that Yamamoto is silent as to Applicant's claimed "pre-reading start line". In response, the claim limitation recites the "limit-line" and "pre-reading start line" that are not specifically determined throughout the Applicant's specification. In light of Applicant's specification (see Applicant's specification, page 12, paragraph 2 and 3, page 12, paragraph 1 and 2), the additional claimed limitation is interpreted as merely a pre-reading means of pre-loading memory blocks of the stored background data into a working memory space. As in the rejection of claim 1, Yamamoto has taught the claimed limitation of pre-reading means of pre-loading memory blocks of the stored background data into a working memory space. The reasons are given next. Yamamoto teaches a game system comprising ROM 11 receiving from a storage means prior to image processing background data for displaying a moving object in three-dimensional virtual space (column 5-6). Yamamoto also teaches a game device with pre-reading means for pre-reading background data from storage means and transferred the pertinent number of polygon data to the block area of the work memory accordance to the vehicle position (e.g., column 5-6, 13-16) wherein a specific area is determined by the polygons from among a plurality of polygons comprising the background data. The examiner thus asserts Yamamoto teaches a pre-reading means for pre-storing background data in advance into ROM or RAM, e.g., for the car race game. Yamamoto teaches car race course (figure 21) with the background data constructed in advance as display data and the polygon data is fetched from ROM for displaying as required by a scene accompanying the movement of a movable object in accordance with the development of the game."

Yamamoto also sets up a limit line for the number of polygons to be read into the work memory. The examiner interprets this teaching as storing the display data in a work memory space in advance that accompanies the movement of a high-speed moving object such as a racing car. In figures 21, Yamamoto further teaches setting a predetermined angle-of-visibility based on a direction of the moving object and as the surrounding around the car changes, the background image is updated accordingly and the visual field moves in the direction of the moving object when viewed from the moving object. Yamamoto also teaches that the polygonal data of pertinent blocks are read in advance from ROM to the work memory (column 5-6). Yamamoto teaches that pre-storing the number of polygons in ROM in advance. Yamamoto has also taught reading means for reading in polygon data of ARn into memory blocks in accordance with a user-changeable upper limit of polygons relative to the moving object wherein the visual field moves in the direction of the moving object when viewed from the moving object. Therefore, Yamamoto teaches setting a limit-line of a visual field at a predetermined distance towards a front of the visual field, and setting a pre-reading start line at a predetermined distance towards the front of the limit-line of the visual field that moves in the direction of the moving object when viewed from the moving object.

As applied to the present application, Yamamoto fulfills the claimed limitation of setting a limit-line of a visual field at a predetermined distance towards a front of the visual field that moves in the direction of the moving object when viewed from the moving object, and setting a pre-reading start line at a predetermined distance towards the front of the limit-line of the visual field.



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